

Name: _____ Block: _____

Motion #4

1. A kangaroo jumps vertically to a height of 2.7 m. How long will it be in the air before returning to the earth?

1.5 s

2. A helicopter is ascending vertically with a speed of $5.50 \frac{\text{m}}{\text{s}}$. At a height of 105 m above the Earth, a package is dropped from a window. How much time does it take for the package to reach the ground?

5.22 s

3. A falling stone takes 0.30 s to travel past a window 2.2 m tall. From what height above the window did the stone fall?

1.8 m

4. A stone is thrown vertically upward with a speed of $12.0 \frac{\text{m}}{\text{s}}$ from the edge of a cliff 75.0 m high.

(a) How much later does it reach the bottom of the cliff?

5.32 s

(b) What is its speed just before it hits the ground?

$40.2 \frac{\text{m}}{\text{s}}$

(c) What is the total distance the stone travels?

89.7 m